



Computerized Mini Steam Turbine Power Plant (Product Code: MSTC01)



Features

- Comprehensive facility for complete investigation of steam power plant.
- Major components utilized are of standard industrial practice.
- Self-contained single base assembly greatly reduces space and installation requirements.
- Low capital cost & Low fuel maintenance costs.
- Control console incorporating instrumentation schematic for complete operation.
- Rapid start-up for effective use of laboratory time.

- All the measured parameter is connected to the computer.

Product Description

Steam Power Plant is designed as a comprehensive self-contained unit with all relevant items of equipment factory mounted on a common steel bedplate. This modular construction and assembly greatly reduces space and installation requirements. The plant can operate as a steam boiler, complete power plant, and has been specifically designed to facilitate student comprehension and operation. This is achieved through relaying all instrumentation and controls to a central console incorporating a schematic diagram of the complete Steam Power Plant System. All the measured parameters is connected to the computer.

The panel is fabricated with suitable SWG CR sheet and as per IS standard; the front portion of the panel consists of computer, Printer, UPS and storage space for books and others. The rear portion of the panel consists of all instrumentations and signal conditioner related components. Power and control wiring are suitably marked using ferule for easy troubleshooting. A standard circuit drawing is normally pasted behind the panel door. The panel is finished with powder coating.

Software (Steam Power Plant performance analysis)

Windows based powerful software for real time data measurement, auto zoom graphs, analog and digital display of data in the computer, store indefinite no of graphs for analysis. The data acquisition software is developed by legion brothers.



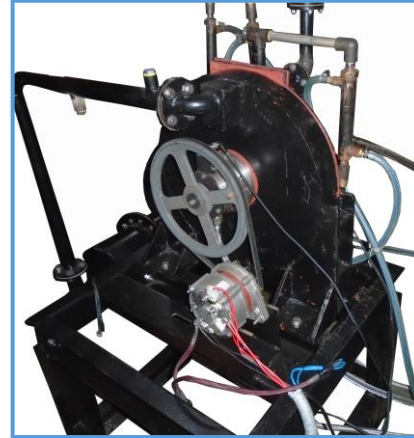
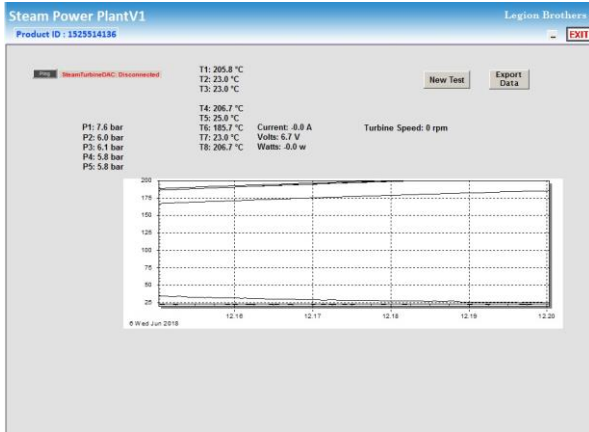
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Product / Component Specification

Product	Computerized Mini Steam Turbine Power Plant
Product code	MSTC01
Turbine	Make : Legion Brothers Designation : Single Stage, Single Row, Single Nozzle Speed : 1000-3000 Rpm Power : 500 Watts Operating Pressure : 4-6 Bar
Dynamometer	Type : DC Generator Cooling : Air cooled Capacity : 750 Watts (14.5V) Speed : 3000 Rpm
Steam Boiler	Make : Thermax Evaporation : 400Kg/hr. Steam Pressure : 10.5 Bar Steam Temperature : 185°C Efficiency : 86% Fuel Consumption : 24Kg/hr. Electric Supply : 3 Phase, 415/380V , 50Hz Total Connected load : 2.2Kw (Blower, Feed pump, Fuel pump)
Condenser	Shell & Multi tube type -Mild steel powder coated
Coupling	Belt
Panel	Mild steel powder coated with provision for mounting computer, ups, printer and instrumentation
Base frame & Tank frame	C channel & Square tube-Mild steel
Water Tank	Capacity-1000 liters
Fuel Tank-Diesel	Capacity-100 liters
Water Treatment Unit	Water Softener, Feed pump & 100 liter Container
Dynamometer load	Lamp Loading
Temperature	"k" type with inline signal transmitter
Pressure	Piezo Resistive 0-20 Bar
Water flow-Boiler	Water flow meter
Water flow-Condenser	Rota meter-Acrylic
Daq	200 Ks/s
Software	Turbine test express for Turbine performance software



Turbine Software



Measurement of Pressure at different points

Type	Piezo Resistive
Range	0-20 Bar
Signal conditioning/transmitter	Standalone
Location	Boiler Steam Outlet Pressure
Type	Piezo Resistive
Range	0-20 Bar
Signal conditioning/transmitter	Standalone
Location	Turbine Inlet Pressure
Type	Piezo Resistive
Range	0-20 Bar
Signal conditioning/transmitter	Standalone
Location	Condenser Vacuum Pressure
Type	Piezo Resistive
Range	0-20 Bar
Signal conditioning/transmitter	Standalone
Location	Orifice Inlet Pressure
Type	Piezo Resistive
Range	0-20 Bar
Signal conditioning/transmitter	Standalone
Location	Orifice Outlet Pressure

Measurement of Voltage & Current

Type	Voltage Transducer
Range	0-24V
Signal conditioning/transmitter	Standalone
Type	Current Transducer
Range	0-30Amps
Signal conditioning/transmitter	Standalone

Measurement of Temperatures at different points

Type	"K"
Range	0-300°C
Signal conditioning/transmitter	Standalone
Location	Boiler Feed water Temperature
Type	"K"
Range	0-300°C
Signal conditioning/transmitter	Standalone
Location	Condenser Steam Inlet Temperature
Type	"K"
Range	0-300°C
Signal conditioning/transmitter	Standalone
Location	Condenser Steam Outlet Temperature
Type	"K"
Range	0-300°C
Signal conditioning/transmitter	Standalone
Location	Condenser Water Inlet Temperature
Type	"K"
Range	0-300°C
Signal conditioning/transmitter	Standalone
Location	Condenser Water Outlet Temperature
Type	"K"
Range	0-300°C
Signal conditioning/transmitter	Standalone
Location	Ambient Temperature
Type	"K"
Range	0-300°C
Signal conditioning/transmitter	Standalone
Location	Boiler Steam temperature
Type	"K"
Range	0-300°C
Signal conditioning/transmitter	Standalone
Location	Fuel temperature